RESEARCH STRATEGY
FOR THE AIMS
CORE IMPACT ASSESSMENTS

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The AIMS core impact assessments (CIA) are methodologically rigorous, longitudinal impact studies of three microenterprise programs: SEWA Bank in India, Mibanco in Peru, and Zambuko Trust in Zimbabwe. The three CIA studies followed a similar research strategy to test the same set of impact hypotheses. This paper describes that research strategy.

Design Challenges

In order to assess the impacts of a microfinance program, it is necessary to address at least three specific conceptual challenges: fungibility, attribution, and selection bias.

- *Fungibility* is a basic characteristic of money. It means that monetary units are interchangeable and can be used for a variety of purposes. It is difficult to trace how loan funds are used within a household.
- *Attribution* refers to the challenge of establishing a strong, plausible case for attributing the observed changes to program participation. Statistical methods can establish correlation, but they cannot prove that a treatment leads to an impact.
- *Selection bias* stems from the fact that people self-select to participate in microenterprise programs. Program managers and credit agents also select the areas and clients that are most likely to be successful. Selection bias can exaggerate the results of an impact assessment, since observed differences in the impact variables may be due either to the impact of program participation or to unobserved differences between program participants and non-participants.

The Conceptual Model

The household economic portfolio model provided the conceptual framework for the CIA and helped to address the challenges of fungibility and attribution. The conceptual model widens the unit of analysis beyond the single enterprise to the entire household portfolio within which fungible capital is used. This eliminates the need to assume that loan funds are spent entirely on the enterprise.

The household economic portfolio model also provides a framework for developing hypotheses about plausible cause-and-effect relationships between program services and impacts. The research in all three countries tested a common set of hypotheses about impacts at the household, enterprise, and individual levels.

The Research Design

The research design was specifically chosen to address the challenges of attribution and selection bias. The quasi-experimental design included a treatment group that had received program services and a control group that had not received program services but were similar to the treatment group in critical ways affecting outcomes. A panel data set following the same respondents over time helped to account for the fixed effects of selection bias and for exogenous effects on outcomes unrelated to program participation. To strengthen the case for making plausible inferences about the impacts of microenterprise services, the research relied on a mixed-method approach, combining quantitative and qualitative methods.

Sample Selection and Data Collection

Client households were randomly selected from client lists provided by the microenterprise programs. Comparable non-client households were randomly selected from within the same neighborhoods as the clients. The non-clients were similar to the clients in terms of gender, sector, location, and eligibility for program participation. In Peru and Zimbabwe, the survey data were collected in 1997 and 1999. The survey data in India were collected in 1998 and 2000. In all three countries, the two survey rounds occurred at the same time of the year in order to control for seasonal variation in the data.

Data Analysis

The samples were divided into two groups for analysis:

- the client sample formed the *treatment group* and
- the non-client sample formed the *control group*.

In each study, specific subgroups of the treatment group were also analyzed separately. These subgroups were differentiated based on characteristics related to their length, level, or type of program participation.

The data were analyzed using several complementary approaches. Paired t-tests, ANOVA, and gain score analysis provided information on changes in the outcome variables between the survey rounds. This provided descriptive information about the direction and magnitude of changes in the outcome variables for each group.

Analysis of covariance (ANCOVA) was used to analyze the panel data and test the impact hypotheses. The ANCOVA procedure controls for multiple differences between the treatment and control groups by statistically matching observations with the same baseline measures on the impact variables and key moderating variables (e.g., gender and sector). The matched observations are compared in the second round to test for consistent differences between the treatment and control groups. By adjusting the estimate of the treatment effect to account for differences in the baseline measures and moderating variables, ANCOVA reduces the influence of selection bias on the impact results.

Case Study Data Collection and Analysis

The case study research supplemented the survey results by examining how and why program participation leads to changes. Using the conceptual framework provided by the household economic portfolio model, the case study research sought to strengthen the case for attribution by reconstructing the chain of events leading from program participation to impacts.

Nine to twelve households were selected in each country based on level of program participation and other characteristics. Multiple cases were selected in each subgroup to provide literal replication. Impacts were also compared across subgroups, such as between new clients and long-term clients, to provide theoretical replication. The two rounds of case study interviews were separated by one year, and the data were analyzed using pattern matching. Where the patterns in the data matched the hypothesized patterns in the study propositions, the case for attribution was strengthened.

Summary and Conclusion

The AIMS core impact assessments were rigorous impact studies that made a strong, plausible case for some important impacts. Four major design features contributed to the strength of the research strategy:

- The mixed-method approach yielded a more informed view about how and why impacts occur and strengthened the case for attributing the observed changes to program participation.
- The quasi-experimental design controlled for the influence of external, non-program factors that affected the outcomes for both clients and non-clients.
- The use of panel data and the ANCOVA procedure, which statistically controlled for baseline differences and multiple respondent characteristics, helped to reduce the influence of selection bias on the findings.
- The conceptual framework addressed the problem of fungibility and provided a logical basis for attributing the observed impacts to the program services received.

The research approach also had several limitations, many of which reflected practical considerations and trade-offs:

- Selection bias was not entirely eliminated from the studies. Alternative approaches, such as the use of an experimental design or more complex econometrics, are associated with their own limitations.
- The baseline data did not provide true pre-treatment measures and may already reflect some impacts. A pre-treatment baseline using incoming clients is possible, but would be logistically difficult and eliminate information on longer term impacts.
- Weaknesses in measures of program participation and some impact indicators could be improved in future studies. Detailed credit history data would be needed to improve the measures of program participation.

In closing, the research strategy used in the AIMS CIA advances the methodological frontier for impact assessments of microenterprise programs. The household- and enterprise-level results of studies like the CIA can be used to improve the efficacy of microenterprise programs and to support them in achieving their economic and social objectives.